

Research Application Summary

**Fish farming for improved income and food security of small scale farmers-  
an initiative of the RUFORUM Community Action Research Programme  
(CARP)**

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**Abstract**

In response to the low fish production which a critical problem among small scale farmers in Sub Saharan Africa, and Malawi in particular, an action research project, which will use the value chain approach that links university and other actors to the farmers will be implemented to enhance fish production and marketing in the Central part of Malawi. This will be done through on farm technology development, and consolidation of breeding nuclei for the improvement of the fish strain of *Oreochromis shiranus*.

Key words: Fish production, Malawi, value-chains

**Résumé**

En réponse à la faible production de poissons dont un grave problème chez les petits agriculteurs en Afrique sub Saharienne, et au Malawi, en particulier, un projet de recherche-action, qui utilisera la méthode de la chaîne de valeur que les liens entre les universités et d'autres acteurs pour les agriculteurs seront mises en œuvre pour améliorer la production et la commercialisation du poisson dans la partie centrale du Malawi. Cela se fera grâce à la technologie sur le développement agricole, l'élevage et la consolidation de noyaux pour l'amélioration de la souche de poissons *shiranus Oreochromis*.

Mots clés: La production de poisson, le Malawi, chaînes de valeur

## **Background**

Per capita consumption of fish in Malawi has declined by about 100 per cent from 13 kg/person/year in the 1970s to less than 4 kg/person/year in 2005, a situation caused by reduced catches, increasing population and urbanization. The burden of this state of affairs is disproportionately felt by poor rural households because of poor fish distribution. This downward spiral of vulnerability and poverty needs to be broken. Unless households are enabled to participate as active stakeholders in food production, sustainable management and use of resources that underpin food production and economic growth in rural areas, it is unlikely that they will strengthen their resilience or coping capacity through forward-looking, economically productive lives.

## **Literature Summary**

Fish production from capture fisheries has declined drastically in recent years. This is evidenced by the low total fish landings, the per capita consumption which has fallen from 13 kg/person/year in the 1980's to less than 5 kg/person/year in recent years. However, there is increased fish demand due to high population growth and urbanisation, thereby necessitating the need to explore alternative avenues for increasing fish production such as promoting aquaculture production. Aquaculture in Malawi contributes to food security in terms of increased access to food, increased food production, improved household capacity to acquire food and improved utilization of farmland for food production (Jamu and Chimatiro, 2004). Aquaculture supplies fish to most upland areas which are not easily accessible to fish from the lakes. Fisheries resources contribute 4 percent to the nation's GDP. Aquaculture accounts for about 2 percent of the nation's fish production. It also contributes between approximately one and 17 percent of overall household income, depending on the fish farming activities involved (SSC, 2005).

In Malawi, there exists a huge potential for increasing fish production through capture fisheries and aquaculture. This will contribute towards food security, income and employment, with surplus production earmarked for the export market to earn foreign exchange, thereby propelling socio-economic development. To achieve this goal, projects need to be initiated to eliminate constraints in fish production and limitations in fish export potential. These will include i) production and technology development, ii) resource management and monitoring, iii) fish quality management, iv) capacity building and institutional strengthening, and v) establishing viable financing mechanisms (GTZ, 2005).

In Malawi there is high demand for farmed fish in the upland areas away from the lakes, and in the urban centres. These upland areas include Mulanje, Thyolo, Mwanza, Neno, Mchinji, Kasungu, Ntchisi, Ntcheu, Lilongwe, Dedza, Dowa, Mzimba, Rumphu and Chitipa. Harvests are not scheduled and the fish are often left in the ponds for prolonged periods of over a year (ADiM, 2005). Most fish in these areas are sold at the farm gate because of the quantities of fish harvested are low and cannot satisfy local demand within the production areas. Aquaculture products from commercial fish farms are sold in the urban centres of Blantyre, Lilongwe, Zomba and Mzuzu through department stores and selected food shops. Compared to fish farmers in some Asian countries, Malawian fish farmers sell a smaller percentage of their harvest, which suggests that they are less market-oriented (ADiM, 2005).

### **Study Description**

The study will build on the on-farm technology development which was conducted in Dowa District (see also Longwe *et al.*, 2010). Various actors along the value chain from input suppliers to consumers will be fully involved, including data generators such as University staff, students, and other stakeholders. Breeders will consolidate breeding nuclei for improved fish strain of *Oreochromis shiranus* and will link with multiplier and production farmers and determine and adapt best bet technologies for improved strain. The study will also incorporate institutions that will train farmers and the stakeholders to understand socio-economic and institutional factors that affect adoption and marketing of fish in order to identify alternative marketing strategies. Identification of critical success factors for farmer organisation and microfinance institutions and their impact on rural livelihoods will be done and will help identify key determinant factors for successful innovations within Malawi fish farming systems. The project will target 160 fish farmers who will be grouped into 4 clusters in the two districts (Dowa and Mchinji).

### **Research Application**

This project will cascade into enhanced food security and incomes of farmers on one hand and enriched University curriculum on the other. It is expected that through the project and follow-up activities, productivity of fish will be increased substantially. The project will build capacity in action research and value chain analysis by training two MSc students, one PhD student, teaching staff, farmers and farmer organizations and other stakeholders (key actors) will be actively engaged in implementation of the project.

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